

## ADDITIONS TO THE JASSID FAUNA OF N. A. (HOMOPTERA.)

BY E. D. BALL, LOGAN, UTAH.

*Thamnotettix Schwartzi*, n. sp.

Form and structure of *Osborni* nearly, slightly longer and narrower, colour of *geminata*. Smoky cinereous, with two round black spots on front of head, and two angled ones on scutellum. Length, 5 mm.

Vertex blunt, rounding into front as in *Osborni*, but still shorter, margins almost parallel, twice wider than long, but little over half the length of the pronotum. Front inflated, parallel margined to just before the apex. Elytra long and narrow, very closely appressed, giving the insect a wedge-shaped appearance. Venation similar to *Osborni*, the third apical cell extremely long and narrow.

Colour.—Vertex pale yellow, slightly washed with orange, the ocelli red, a pair of round black spots between them equidistant from the ocelli and each other. Face pale yellow, the sutures dark, a few short smoky arcs on lower part of front. Pronotum cinereous. Scutellum yellow, a triangular black spot just within each basal angle. Elytra cinereous, the costal margin subhyaline, a narrow smoky stripe at apex. Veins of clavus and claval suture pale, veins on corium and a line along the claval suture smoky, emphasized on a line which follows the outer sector omitting its outer branch, and ends in the margin of the third apical cell.

Genitalia.—Female segment one-half as long as its width, posterior margin slightly rounding or sinuate, with a slight median projection as wide as the ovipositor. Male valve short, plates together gibbous at base and then rapidly narrowing into long, attenuate tips, one-third longer than their basal width.

Described from a pair from Dewey, Utah, collected by J. R. Horton, and one female from Ash Fork, Arizona, collected by Barber and Schwartz, and received from the U. S. National Museum. Named in honour of Dr. Schwartz, of the National Museum, whose collecting in Utah, Arizona and New Mexico has added so much to the knowledge of the Homoptera of this region.

*Thamnotettix Kirkaldyi*, n. sp.

Form of *Osborni* nearly, closely resembling *geminata*, smaller and with a more inflated vertex than either. Length, ♀ 4 mm.; ♂ 3.5 mm.

Vertex rounding, one-half longer on middle than against an eye and nearly as long as pronotum. Anterior margin rounding into front. Front

rather narrow and almost parallel margined until just before the apex. Elytra moderately long, appressed behind, costal margin curved, giving the insect a stout appearance. Venation regular, often an extra veinlet or two on the claval area, the third apical cell somewhat narrowed.

Colour.—Vertex creamy yellow, a pair of round black spots between the ocelli as in *Schwartzi*, another pair just outside and posterior to the ocelli, and a third and smaller pair equidistant from each other and the eyes at the base. Sometimes some brown markings midway between these and the apical pair assume the appearance of a pair of spots. Face creamy, the sutures and arcs on lower part of front, smoky brown. Pronotum cinereous, a row of submarginal dots set off by an arcuated line and some irregular mottlings on disc fuscous or brown. Scutellum creamy yellow, a pair of angular spots just inside the basal angles, the impressed line and a pair of round dots on anterior disc black. Elytra cinereous, shading to subhyaline on the margin, the nervures light, a narrow dark, smoky stripe in the cells between the claval nervures and another wider one just inside the outer sector of the corium, ending in the third apical cell.

Genitalia.—Female segment twice wider than long, the lateral angles rounding, the posterior margin triangularly emarginate, one-third the depth of the segment, with a strap-shaped tooth in the centre of the emargination as long as the segment. Male valve short, rounding, plates together, rounding at base, then narrowly attenuately pointed and up-turned.

Described from ten examples from Tia Juana, San Diego and Salinas, California, collected by the author. This distinct little group of the genus already contains the names of Heidemann, who has made many eastern forms known; of Osborn, who has done so much in the Mississippi Valley; of Schwartz, for the intermountain region; of Coquillett, to whom we owe much of our knowledge of the Coast fauna, and it seems but fitting that we should add the name of Kirkaldy, who has done an immense amount of work on our Pacific Island fauna and whose recent untimely death is mourned by all.

*Thamnotettix intricata*, n. sp.

Resembling *flavocapitata* in size and form, slightly smaller, darker, with irregular reticulate veinlets. Rusty brown, with darker spots on vertex and milk white markings on elytra. Length, 5 mm.

Vertex slightly obtusely angled, the apex pointed, conical, half longer on middle than against the eyes, as long as the pronotum, slightly longer than its basal width, disc slightly sloping, anterior margin rounding to the full front except at the apex. Front and clypeus as in *belli*. Elytra long, inclined to be flaring posteriorly. Venation regular, but often obscured by numerous irregular reticulate veinlets on the clavus and in the ante-apical cells.

Colour.—Vertex pale, heavily washed with rusty brown, usually omitting a pale band before the eyes and often intensified as an oblique brown-dash either side the pointed apex. Face pale, with short brownish fuscous arcs and still darker sutures. Pronotum rusty or chocolate brown, with an anterior arcuated submarginal line paler. Elytra rusty or chocolate brown, with the nervures lighter, the irregular reticulations are usually strongly milky white and there is usually an oblique subhyaline light area beyond the middle of the costa. The apical cells smoky, with the nervures light.

Genitalia.—Female segment long, truncate or slightly concave posteriorly, with a broad angular median emargination, from which arises a strap-shaped tooth considerably exceeding the segment. Male valve triangular, apex round, plates strongly transversely convex, long, attenuate with the margins thickly beset with long hairs.

Described from four females and one male from San Francisco, collected by the author in September. The reticulate venation and white nervures will readily separate this species from any other described.

*Thamnotettix rupinata*, n. sp.

Form and general appearance of *intricata*, but lacking the supernumerary veinlets. Reddish or greenish brown, with a bisected black spot on the apex of vertex. Length, 5 mm.

Vertex slightly obtusely angular, the apex rounding, half longer on middle than against either eye, as wide as its median length in the female, narrower in the male, face long and narrow as in *intricata*. Elytra long and narrow, inclined to be closely appressed in the male, with the tips flaring, venation typical, regular, without extra veinlets.

Colour.—Vertex orange yellow, a large semi-circular black spot on the apex, bisected by the narrow, white median line, face pale, with narrow sutures and traces of arcs brown. Pronotum greenish or reddish brown, with a pale anterior margin, accentuated in the centre. Scutellum pale yellow, the basal angles olive. Elytra olive subhyaline with a reddish

brown cast. The venation obscure except the veinlets surrounding the apical cells, which are a dark rusty brown. The apices of claval veins milky white.

Genitalia.—Female segment moderately long, truncate posteriorly, with a median emargination and produced tooth as in *intricata*. Male valve small, inconspicuous, rounding, plates long, triangular, slightly attenuately pointed.

Described from two males and three females taken at San Francisco, California, in June and September, by the author. The large black markings and dark apical veinlets will at once separate this species from its allies.

*Athysanus (Conosanus) Uhleri*, n. sp.

Resembling *anthracinus*, but slightly larger and lighter coloured and with a more pointed vertex and shorter elytra. Black, with orange markings and pale nervures. Length, ♀ 4.5 mm.

Vertex slightly obtusely angular, the margins straight, twice wider than long, nearly twice longer on middle than against the eye. Pronotum half longer than vertex. Elytra broad and short, about equalling the body, posteriorly roundly truncate. Venation as in *anthracinus*, the central antepical cell scarcely narrowed, apical cells broad and short, rarely much longer than wide.

Colour.—Black, a line on base of vertex with a point extending forward on either side, a pair of oblique spots against the eyes, a few spots near apex of vertex and on anterior part of pronotum, a pair of irregular stripes on scutellum and the elytral nervures yellow. A few traces of pale in the discal cells. Face black, a few short yellow arcs. Legs black, the anterior and middle pair abruptly yellow from just before the apex of femora. Hind tibia with the spines yellow.

Genitalia.—Female segment but little longer than penultimate, posterior margin roundly produced on median half, the lateral angles produced.

Described from two females collected by the writer at Ames, Iowa. In the Osborn and Ball Review this species was confused with the one described as *plutonius* Uhler. That is, however, a longer and narrower species, with a wider head and fuscous banded femora.

*Athysanus (Commellus) estacadus*, n. sp.

Resembling *Curtisii* in size and general appearance, but with a flatter,

black margined vertex. Straw yellow, with venation and margin of elytra light. Length, 3.5 mm.

Vertex almost flat, slightly transversely convex, a trifle shorter than its basal width. The anterior margin broadly obtusely angled, vertex and front meeting in an acute angle, the margin subacute. Front resembling *Osborni*, in general form, slightly more convex. Pronotum as in *Osborni*, slightly shorter; elytra as in *Curtisii*, scarcely longer than the abdomen; venation distinct, regular, resembling *Curtisii* except that the outer apical veinlets are decidedly curved.

Colour.—Almost uniform bright straw yellow, vertex with the margins light, a broad black band just back of the anterior margin, pronotum with a narrow, light, median band. Elytra with the nervures and margins light, the ground color intensified against the broader veins and margins. Face pale, a black spot on the clypeus, front fuscous with a median stripe, the upper margin and about six pairs of short arcs pale yellow.

Genitalia.—Female segment short, scarcely one-third as long as its basal width, posterior margin slightly broadly emarginate, disc of the segments slightly tumid at the apex of emarginations and brown margins, giving the appearance of a broad median tooth.

Described from three females from Texas, one of which was received through the kindness of E. P. Van Duzee. The black band on the vertex margin renders this quite distinct in our fauna.

*Deltocephalus fraternus*, n. sp.

Resembling *pectinatus*, but larger and darker, with shorter, less flaring elytra, ashy gray, with large quadrate spots on vertex and pronotum and the margins of the elytral cells fuscous. Length, ♀ 4 mm.; ♂ 3.5 mm.

Vertex long, acute, resembling *pectinatus*, but much longer, as long as in *areolatus*, nearly twice as long as the pronotum, disc flat, the margins straight to the blunt tip. Pronotum short, transverse, set well into the concave posterior margins of the head. Elytra shorter, less flaring than in *pectinatus*. The apices inclined to be narrow, rounding and appressed, exposing the last abdominal segment in both sexes. Venation similar to *pectinatus*, the claval nervures irregular and usually tied to the margins, central anteapical cell divided, often into four cells, in which case the posterior three are small and nearly circular, usually four reflexed veinlets to the costa.

Colour.—Grayish white, with a definite tawny tinge, vertex with the ivory apex broadly black margined, four large quadrate fuscous spots between the eyes and a triangular one between them and the apex, fuscous. Pronotum with six or eight angular and usually transverse spots. Elytra gray, with most of the nervures light, the cross nervures and reflex veinlets broadly light and mostly heavily fuscous margined. Face varying from black with a few pale arcs to black above and tawny brown below, but in any case the fuscous markings extend the entire length of the front on the sides.

Genitalia.—Female segment short and broad, the lateral angles produced into large, triangular, slightly depressed ears, posterior margin between the ears slightly convex, with a narrow median slit half way to base, the margins of which are usually produced into minute teeth, whole posterior disc of segment shining, black. Male valve long, triangular, stout, shining, the apex acutely pointed and slightly upturned, plates smaller, polished, narrow, only appearing as ridges outside the long valve and terminating as two finger-like projections fitting down into the inflated pygofer.

Described from one female from Jacksonville, Florida (Mrs. Slosson), in the author's collection, and three males and six females from St. Petersburg, Sanford, and Oaks, Florida, received from Mr. Van Duzee. The long vertex, with definite quadrate fuscous markings and the three small cells in the antepical like the "three links," renders this a striking and easily recognized species.

*Deltocephalus fraternus*, var. *mendosus*, n. var.

Smaller and paler than *fraternus*, with the fuscous spots on vertex only faintly indicated in pale brown. Length, 3.5 mm.

Vertex shorter than in the species slightly variable, but with the same form at apex and with the black margin around the ivory tip, rest of marks on vertex and pronotum reduced to pale brownish traces. Elytra as in *fraternus* or slightly shorter, venation the same except that in the shorter forms one of the "three links" may be obscure.

Colour.—Grayish, washed with tawny, usually three black spots in a line on the elytra still remain, one against the cross nervure to claval suture, one against the "first" cross nervure and one against the apex of the third apical cell. Face black above, with light arcs, shading out to tawny below.



Genitalia.—Female segment moderately long, posterior margin slightly concave, the median fifth excavated, the excavation gradually or abruptly narrowing to a slit as in *fraternus*, posterior disc with a quadrangular black area.

Described from five females from Estero, Florida, received from Mr. Van Duzee. This may possibly represent a distinct species, the size and colour are always slightly variable in this group and are not specific. There appears, however, to be quite a difference in genitalia, although both are of the same general type and both slightly variable. A longer series will be necessary to definitely determine whether this is an extreme form adapted to some slightly different faunal region or a distinct species.

*Deltocephalus micarius*, n. sp.

Resembling *Weedii*, but larger and with longer and more flaring elytra. Brownish straw, with five stripes on pronotum, and nervures light. Length, 3.5 mm.

Vertex flat, almost twice as long, at apex as against eye, right-angled in front, the margins straight, the apex not at all produced as it is in *Weedii* and *compactus*, face as in *Weedii*, pronotum with the anterior margin strongly arched, elytra long and narrow, inclined to be flaring posteriorly, extending considerably beyond the abdomen in both sexes. Venation similar to that of *Weedii*, the outer claval area strongly reticulated with central anteapical cell elongated, constricted through the median portion and usually divided by a broad union of the nervures for some distance.

Colour.—Pale brownish straw, the vertex washed with orange, the margins and median line narrowly light, a pair of minute spots just back of the ivory apex and a larger pair midway to the ocelli black. Pronotum with traces of olive on the disc and five narrow light stripes. Elytral nervures light, slightly margined with brownish, which shade into fuscous against the first cross nervure to claval suture, again on the first cross nervure between the sectors and almost filling the apical cells, face fuscous brown, with short arcs on front and concentric markings on genæ light.

Genitalia.—Female segment short, the lateral angles rounding into the posterior margin, which is nearly straight except for a small median tooth. Male valve small, short, plates small, the outer margin concavely narrowing to the rather broad, truncate tips.

Described from two pairs from Seven Oaks, and Sanford, Florida, collected and sent by E. P. Van Duzee. In head characters this species

approaches closely to the *Sayi* group, but the reticulate venation allies it with *Weedii* and *compactus*.

*Phlepsius nudus*, n. sp.

Form of *ramosus* and *occidentalis* nearly. Stout, with a foliaceous vertex and sparse reticulation. Length, ♀ 6 mm.; ♂ 5 mm.

Vertex roundingly right-angled, disc flat or depressed, anterior margin thin and produced beyond the line of the front, front broad above, regularly narrowing from just below the ocelli to the straight clypeus. Pronotum short, scarcely longer than vertex. Elytra broad, short, venation distinct, regular.

Colour.—Dirty straw, slightly tawny on vertex, disc of pronotum and angles of scutellum washed with brown, disc of scutellum pale, with a pair of brown points, elytra subhyaline, slightly milky, with the veins and a few scattered reticulations, tawny brown, face brown.

Genitalia.—Female segment long, truncate behind, surface strongly convex, with a sharp, median carina on disc and traces of two faint lateral ones. Male valve equilaterally triangular, the apex rounded, plates narrow, together long, spoon-shaped, three times the length of the valve, the apices narrowly rounding.

Described from a male from Seven Oaks, Florida, and a female from Fort Meyers, Florida, received from Mr. Van Duzee. This is the smallest of the *humidus* group of Phlepsids and is easily recognized by the lack of reticulation on the elytra.

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#### SHORT NOTES ON INSECTS.

We wish to call your attention to the Editor's request on page 314, Vol. XLII, for notes on habits, food-plants, unusual captures of insects, etc., particularly Canadian species. Not only would such short notes add to the interest of this magazine, but would greatly help those connected with issuing the numbers in filling up spaces. It should be a simple matter to comply with this repeated request during the summer months, at all events.

A. F. W.

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ERRATA.—Vol. XLIII, page 42, line 4, after type insert the word *and*; page 80, line 11 from foot, for Vol. VIII read *XXXVIII*; page 83, lines 3 and 5, also page 85, under figure, for *zerœ* read *zeroë*; page 145, line 18, for *donating* read *denoting*.